

# FINANCIAL CRISES: PREVENTION, CORRECTION, AND MONETARY POLICY

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The financial crisis that surfaced in 2007 has stressed the need to identify the ultimate sources of the incentives that were behind the preceding credit and housing bubbles. To lower the likelihood of future financial collapses, prudent economic policies as well as an adequate regulatory and supervisory framework for financial institutions are required. Monetary policy, in turn, should be directed toward price stability, which is a central bank's best contribution not only to long-term economic growth, but also to financial stability.

## Bubbles and Recurrent Crises

Since the late 1990s, the United States and other advanced countries exhibited rapid rises in housing prices that were supported by sizeable leverage taken on by households and firms. A credit bubble evolved, along with a housing bubble, as banks and other financial intermediaries facilitated borrowing by relaxing mortgage product standards. In some countries, notably in the United States, credit expansion was fueled by a substantial use of loan securitization and credit derivatives.

The eventual bursting of the housing and credit bubbles resulted in a global turmoil with severe consequences in terms of financial instability and a drop in income. Through contagion, this burden was

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shared by many countries that did not create any autonomous asset bubbles. The most affected nations were those holding close investment and trade ties with the United States, as was the case of Mexico. The widespread negative impact of the meltdown has justifiably called the attention of policymakers to finding ways to pursue financial stability and avoiding future collapses.

To be realistic, the scope of such an objective should be properly bounded. Financial bubbles, characterized by substantial rises in asset prices departing from previous trends that are suddenly interrupted by a sharp fall, have been common in economic history. While volatility in stock, currency, and commodities prices are the norm, occasionally bubbles emerge in many assets, including housing.<sup>1</sup>

Bubbles are formed because many people believe that the price of the underlying asset will continue to rise into the indefinite future and that they can sell the asset before a change of fortunes occurs. Long-lasting bubbles may reflect information asymmetries and costs associated with arbitrage in the form of short-sale constraints. In market economies, asset price fluctuations and bubbles could be interpreted as unavoidable and even beneficial as they become the means of rewarding good choices and punishing bad decisions.

One macroeconomic risk of asset price collapses is the possibility of a growth slowdown or a recession. The empirical evidence of the effects of price falls in stock and currency markets is somewhat mixed. However, the likely negative real consequences of housing bursts appear to be clearer. Statistical analyses reveal that housing prices are strongly pro-cyclical and that they are leading indicators of recessions and expansions.<sup>2</sup>

A second, potentially more serious cause of concern over large housing price fluctuations is that they have frequently ended in

<sup>1</sup>More formally, a bubble is defined as rises in asset prices that exceed an asset's fundamental value. Its testable implications are necessarily conditional on the theoretical model chosen. For alternative assessments of classical bubble cases, see Garber (2001) and Kindleberger and Aliber (2005).

<sup>2</sup>For example, considering 15 U.S. stock market crashes over the previous century, Mishkin and White (2003) find that not all resulted in economic contractions, and Bleasby and Castilleja-Vargas (2009) demonstrate that currency depreciations during 1985–2004 were expansionary in developed markets. Leamer (2008) uncovers a strong impact of housing crisis on output in the U.S. and Assmann, Boysen-Hogrefe, and Janssen (2009) estimate significant real effects of housing crises for a group of 15 industrial countries.

banking crises. These episodes may involve problems of liquidity and insolvency of certain financial institutions to the extent that the functioning of the economy becomes impaired, for instance, if they produce a widespread panic and loss of confidence.<sup>3</sup>

A target of smooth asset price behavior is hardly attainable through economic policy, given the intrinsic uncertainty involved in financial transactions and the imperfect information policymakers have at hand. More important, however, is the fact that such an objective is probably undesirable as it amounts to controlling risk and returns, thereby creating moral hazard and inhibiting innovation and growth.

What does constitute a sound policy goal is building conditions to ensure the continuous functioning of the basic financial system, particularly the banking system, without which the economy cannot work. This focus, which operationally requires delimiting what a basic system is, gives content to the objective of both financial stability and crisis prevention.

## Preventing Financial Crises

The global crisis reflected excessive risk-taking and high leverage on the part of economic agents and financial institutions. A basic postulate of economics is that people respond to incentives. Hence, to reduce the probability of another financial collapse, it is necessary to learn from experience by identifying the ultimate sources of the incentives that led to the crisis. By this, I mean the environment that economic agents face in making decisions. Given this setting, private actions can be regarded as results, not as root causes of problems. Examples of such actions during the last crisis are the high bonuses paid to bankers for placing securitized loans and the poor credit evaluation of these instruments by rating agencies.

There is a large body of literature discussing the possible origins of the financial debacle. Of course, any list of factors is incomplete—not only to explain the crisis but to enable anticipation of future ones. Despite this obvious limitation, one can expect that correction of the identified conditions for inadequate incentives will lower the probability of banking disasters.

<sup>3</sup>Rieinhart and Rogoff (2009: 158–62) examine the magnitude and duration of 21 downturns in housing prices that have accompanied major banking crises in both advanced and emerging economies.

For expedience, the causes of the turmoil can be classified as cyclical and structural. In the first group, two contributing factors stand out. One refers to the low interest rates that prevailed in the years prior to the global crisis. Authors are divided in stressing, as the *main* source of this phenomenon, either an expansionary monetary policy reflected in short-term policy interest rates, or capital inflows from emerging markets to developed countries that affected long-term interest rates.<sup>4</sup>

There is much debate on the significance of the possible deviation of U.S. monetary policy from the “correct” Taylor rule during 2002–05. However, many empirical studies conclude that policy interest rates that were negative in real terms and deviated from traditional Taylor rules in the advanced economies did contribute to the gestation of the crisis. The verified channels include an increase in housing investment and prices, a stimulus to borrowing, greater risk-taking by economic agents and banks, an increase in bank leverage, and the loosening of lending standards. On the other hand, statistical evidence of a separate contribution of capital inflows to the crisis appears less conclusive.<sup>5</sup>

The other factor of cyclical conditions encompasses policies aimed at promoting the expansion of lending, through fiscal subsidies for borrowers, credit targets for banks, and government guarantees on loans—for example, to make housing more “affordable” for low-income people. In the United States, government-sponsored enterprises promoted massive securitization of subprime loans, something which was crucial in the gestation of the bubbles.

A central lesson here is that economic policy should not become a source of problems. Expansionary monetary policy beyond optimal rules during a long-lasting period and policies that artificially promote credit expansion should be avoided, among other reasons, because they produce inadequate incentives.

<sup>4</sup>This hypothesis was referred to as a “global saving glut” by Bernanke (2005).

<sup>5</sup>The debate has been led by Taylor (2008) and Bernanke (2010). Adrian and Shin (2009), Eickmeier and Hofmann (2010), and Maddaloni and Peydró (2010) provide empirical evidence of the effect of lax monetary policy on the crisis. Obstfeld and Rogoff (2009) consider that the possible existence of a “savings glut” was partly the result of the U.S. monetary policy stance, and Bracke and Fidora (2008) confirm empirically that the “savings glut” was probably a less important driver of the economic imbalances than a “liquidity glut.”

Moreover, the structural factors behind the crisis entail a poor regulatory and supervisory framework for intermediaries. Regulation is justified to counter externalities such as the ones experienced during the crisis. The prevailing regulatory rules probably contributed to the high leverage and large maturity mismatch taken on by banks and other financial institutions that ended in widespread counterparty mistrust, liquidity shortages, and contagion to other markets. To a large extent, the undue exposure to risk was possible because banks took much investment off their balance sheets.

One possible source of weakness stems from capitalization and liquidity standards that were not effective enough to avert the crisis. A preventive, stronger set of requirements in terms of levels and composition, together with a “sufficiently” broad scope, is necessary to generate responsible behavior in the financial system. In principle, more stringent capitalization requirements would induce shareholders of institutions to monitor more carefully the risk positions adopted by their managers. Also, stricter liquidity standards would allow banks to handle stress situations associated with tightened funding sources and increased deposit withdrawals with more flexibility. Obviously, these restrictions may have an impact on the availability and price of credit. Yet, the increased social benefits are expected to surpass the costs.

For capitalization, the definition of capital should be narrowed to include only truly loss-absorbing items such as common equity. Ideally, one would like differentiate with different weights not only the type of asset in general but the specifics of such assets—for example, a mortgage for a low-risk customer should not absorb the same capital as one for a high-risk customer. In practice, however, this procedure might be cumbersome and, most importantly, it would be largely dependent on judgment despite the sophistication of any model. Hence, it is probably better to seek high standards of capital relative to non-risk weighted assets including off-balance sheet exposures—that is, the total leverage ratio. Also, buffers for bad times and contingent debt conversions into equity for tail risk situations are highly desirable.<sup>6</sup>

As for liquidity, although extreme versions of null maturity mismatch between the assets and liabilities of banks have proven

<sup>6</sup>On the contingent debt conversion proposal, see Squam Lake Working Group on Financial Regulation (2009).

historically impractical, a more flexible and modern version of Simons's (1948) full-reserve banking for retail deposits supporting the payment system should not be excluded *a priori*.<sup>7</sup>

The agreement reached by the Basel Committee in September 2010, known as Basel III, which established higher capital standards including two new capital buffers ("conservation" and "countercyclical") to be introduced gradually, and a Tier 1 leverage ratio to be analyzed further, is a step in the right direction. Nevertheless, the new requirements may still prove insufficient to prevent crises, given their relatively low target values, and the inclusion of components of lesser quality than common equity in Tier 1 capital. Overcoming these limitations is of the utmost importance considering the poor record of the Basel Core Principles for banking supervision in preventing financial problems in the past.<sup>8</sup>

However, the regulatory weakness that more likely led to excessive risk-taking in this crisis was the ambiguous government safety net held out to investors and institutions. This included the explicit limited guarantees on deposits but, most importantly, the realized assumption that, when problems arise, the government can extend this protection to other investments and rescue financially significant institutions.

In particular, the "too big to fail" policy is a well-known source of moral hazard that leads to the unpleasant outcome of promoting risk-taking with private rewards and socially shared costs. The only solution to dealing with this problem is to abolish the policy. This would imply forgoing the bailout capacity of the authorities, perhaps through a legal restraint, and treating all institutions alike in terms of standards and liquidation procedures. In case of a failure, shareholders and unsecured creditors should fully absorb all costs.

To counter possible externalities coming from the failure of *any* institution, a variable surcharge on capital may be imposed based on

<sup>7</sup>Along these lines, Kotlikoff (2010) proposes a "limited purpose banking" framework in which banks only offer checking accounts and shares of mutual funds. Checking deposits have 100 percent reserves and mutual funds serve the lending purpose and do not have maturity mismatch. In such an arrangement, there cannot be bank runs or wild swings in the money multiplier.

<sup>8</sup>King (2010) points out that Basel III may not avoid crises because capital requirements are insufficient, risk weights are computed from past experience, and considerations of liquidity and liability structures are omitted. Demirgürç-Kunt and Detragiache (2010) find no evidence of a robust statistical relationship between compliance with Basel Core Principles and improved bank soundness.

an index of significant variables such as size and interconnectedness. Clear rules of liquidity provision for solvent institutions on the part of the lender of last resort as well as expedient resolution mechanisms including living wills and efficient bankruptcy laws for insolvent ones, are essential elements of a stronger regulatory framework.

## The Need for Corrective Measures

The preventive approach just outlined should help promote financial stability. Presumably, the deeper the changes are, the less likely the financial system will face severe problems in the future. Unfortunately, these measures cannot guarantee the elimination of crises.

In addition to the long history of recurrent financial calamities, which by itself is a challenging precedent, there are other reasons for not holding overly optimistic expectations. Among others, the list of possible causes of crises is surely longer than the one previously analyzed; the implementation of the recommended guidelines could be deficient; and unless rules are sufficiently broad and supervision is really effective, there are always ways to circumvent them.

From this standpoint, it is necessary for authorities to remain vigilant in order to react in a timely way to early warnings of a possible financial crisis. This is clearly a daunting task, as policymakers face obvious limitations. Authorities hardly have knowledge that is superior to that of market participants, and typically most economic agents do not recognize bubbles as they develop, which is one condition for the persistence of bubbles. Widespread underestimation of risks was certainly the case in the global crisis. Although some authors, such as Kasriel (2004) and Rajan (2005), warned of increased risks before the problems arose, their admonitions were widely ignored.

The fact that most authorities miscalculated the risks in the crisis is worrisome. The inability to detect incipient problems and the time it takes for any economic policy to exert effects restrict the scope for corrective measures, where lags can even make them counterproductive.<sup>9</sup>

<sup>9</sup>For example, reviewing the financial stability reports of 47 central banks published in 2006, in the wake of the crisis, Čihák (2006: 22) finds that “virtually all (97 percent) started off with a positive overall assessment of the domestic system.”

In addition, even if detection were not a problem, authorities may be unwilling to implement policies to counter a likely imminent crisis. This may reflect capture by the regulated entities, which tend to evaluate most growth developments favorably, including unsustainable credit expansions. Alternatively, reluctance to act preemptively may result from the authorities' preference to react only after a bubble collapses. In monetary policy, this position articulated by former Federal Reserve chairman Alan Greenspan, came to be known as the "Greenspan put."<sup>10</sup>

In any case, the debacle proved that the "hands-off" approach to dealing with pre-crisis symptoms was too costly in terms of posterior instability and the unprecedented measures implemented to offset the effects of the resulting turmoil. In particular, the extraordinary actions undertaken post mortem pose significant challenges for the conduct of monetary and fiscal policies in the future. Hence, in light of the described limitations, the need to intervene in the form of corrective measures should be viewed as a "second best" solution to problems, to be used only to overcome deficiencies in the preventive approach.

To make this requirement operational, a systemic risk supervisor needs to be defined that would be in charge of assessing evolving risks based on well-defined methodologies. It is preferable for prescriptions to be made in accordance with contingent rules announced in advance to the public. The authorities' role can be complemented with the advice of independent experts.<sup>11</sup>

At this point, the obvious question is which tools should be used to react to indicators of crisis. Assuming that no undue expansionary monetary or financial policies prevail, the appropriate instruments should strengthen the regulatory and supervisory framework. Within this area, it is reasonable to favor those measures that maximize effectiveness with the least possible distortions. The menu of tools includes higher capital and liquidity requirements, lower loan-to-value ratios, limits to lending concentrations, and stricter loan origination standards.

<sup>10</sup>A term coined after the Fed's interest rate cuts following stock market collapses. For an exposition of this view, see Greenspan (1999).

<sup>11</sup>For example, Tarullo (2010) proposes the creation of an advisory committee that would assess macroprudential evaluations.

## The Role of the Central Bank

In addition to the previous conditions, three issues seem to dominate the debate about the ways in which central banks can contribute to financial stability. The first is the idea that monetary policy should attempt to directly control financial booms that may lead to a crisis. Given the relationship between relevant interest rates and asset prices, the advocates of such a strategy argue that central banks can raise their policy interest rate to prick asset bubbles.

It is widely known that monetary policy affects the general level of prices, at least in the long run, and that it may influence output only transitorily. The transmission mechanism of monetary policy to relevant variables, which is a subject of continuous empirical research, may include several channels, one of which is asset prices. Hence, to the extent that asset prices provide relevant information about the future state of the economy, central banks take them into account in setting interest rates. However, its aggregate effects make monetary policy ill-suited for directly abating bubbles.

Among the disadvantages is the possibility that this attempt may easily enter into conflict with other goals already entrusted to policymakers. For example, the interest rate increase necessary to “lean against” a bubble may be so large as to exert a negative effect on output. The possible conflict in the pursuit of the goals, in turn, may lead to a lack of accountability, since deviations from one goal could be justified in terms of the pursuit of other goals. More importantly, perhaps, is the fact that using monetary policy to contain asset bubbles can be interpreted as a commitment to smoothing out asset price fluctuations, thereby dampening market signals and creating moral hazard.

In light of the challenges involved, monetary policy should focus on the primary goal of pursuing price stability. Given that credit and housing bubbles are relevant to the extent that they may weaken the financial system, it is better to use the aforementioned regulatory and supervisory tools to target the source of the problems, such as loose credit standards or excessive bank leverage.

A second issue concerns what is referred to by some authors as a “new central bank paradigm.” In this view, central banks are claimed to have failed to detect the signs of the crisis and to have implemented measures to prevent it because their focus on price stability was too narrow. Accordingly, part of the problem was the use of

incomplete economic models that do not incorporate crucial aspects of the financial sector. The solution to this weakness is then seen as a modification to the central banks' mandate so that it includes financial stability in addition to price stability and, in some countries, full employment, making central banks accountable for all of these goals. It is also advised that augmented economic models should be built to guide policy decisions.

Although suggestions to improve performance are always helpful, including those regarding methodological shortcomings, the intended paradigm revision should be viewed with caution. Most central banks already have legal obligations related to financial stability, so a mere change to statutes would not necessarily make much difference.<sup>12</sup>

Moreover, monetary decisionmaking is only partly based on models, as it considers all relevant available information and combines it with judgment. Of course, it is always wise to refine econometric frameworks to include significant relationships. However, by their nature, models are simplifications of reality, so, out of necessity, they omit many factors. Simple criteria such as the Taylor rule are powerful not because they incorporate everything but because they serve as a robust guide to monitoring central banks' commitment to price stability.

Furthermore, the contribution of price stability to financial stability should not be underestimated. The worldwide conquest of inflation has been an outstanding achievement that has substantially increased social welfare and eliminated a common source of banking crises, especially in emerging economies, such as that witnessed in Mexico in the mid-1990s. Price stability is a necessary condition for avoiding undue banking collapses. This, however, does not preclude the need for central banks to be involved in crucial specific responsibilities aimed at promoting financial stability, applying their expertise in cooperation with other authorities.

The third issue centers on the implications of the unprecedented expansionary monetary stance adopted by the central banks of the

<sup>12</sup>For example, the law establishes that the primary goal of the Bank of Mexico is "to maintain the purchasing power of the currency," and two other ends are "to promote the healthy development of the financial system and to procure the good functioning of the payment systems."

developed countries, particularly the United States, in the sequel to the crisis. In addition to the complications of eventually implementing effective exit strategies once inflation risks emerge, this stance has induced investors to search for higher yields, and therefore, to assume more risk.

The resulting capital movements have tended to inflate the prices of certain assets, including the currencies of emerging market economies. Even though the migration of funds could soon prove to be transitory, since 2009 the governments of various countries have been implementing measures intended to avert the appreciation of their currencies. These actions include some varieties of capital controls and central bank interventions in foreign exchange markets. However, capital controls may lessen investor confidence in these economies, generate black markets, and inhibit the entry of capital necessary for innovation and productivity improvements. Currency interventions, in turn, are hardly effective and tend to impose financial losses on the central bank. Furthermore, the most important threat generated by these actions is a widespread movement toward protectionism that could hamper the sustained recovery of the world economy. Thus, it is preferable to completely avoid these measures.

## Conclusion

The global crisis has revealed the importance of establishing conditions to ensure the continuous functioning of the financial system. To lower the likelihood of financial collapses, an indispensable prerequisite is for economic policy never to become a source of problems. Additionally, a preventive, rules-based approach to the regulatory and supervisory framework of financial institutions is a prerequisite for generating adequate incentives.

The crisis confirmed that the “hands-off” approach in dealing with early warnings of risks was too costly in terms of the eventual instability that ensued and the unprecedented policy measures later undertaken, which now imply future restrictions. Corrective intervention measures should be viewed as a “second best” solution, to be used only to overcome deficiencies in the preventive regulatory approach.

Finally, monetary policy is ill-suited for directly abating bubbles. Given that bubbles are relevant to the extent that they may weaken the financial system, it is better to use regulatory and supervisory

tools to target the source of problems. Moreover, the scope of a new central bank paradigm should be viewed with caution, especially if it implies the underestimation of the contribution of price stability to financial stability. Also, the risks associated with the unprecedented monetary measures undertaken by the central banks of developed nations to offset the consequences of the crisis include the threat of protectionism, something that should by all means be avoided.

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